



Pennsylvania Power & Light Company

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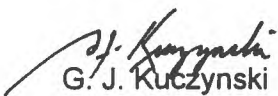
March 27, 1997

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 50-387/97-006-00
PLAS - 702 FILE R41-2

Docket No. 50-387
License No. NPF-14

Attached is Licensee Event Report 50-387/97-006-00. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that Susquehanna SES Unit 1 was manually scrambled in anticipation of the loss of condenser vacuum due to the isolation of the Offgas System.


G. J. Kuczynski
Plant Manager - Susquehanna SES

Attachment

cc: Mr. H. J. Miller
Regional Administrator
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Kenneth M. Jenison
Sr. Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 35
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**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Unit 1

Susquehanna Steam Electric Station

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TEXT (if more space is required, use additional NRC Form 366A's) (17)

EVENT DESCRIPTION

On February 25, 1997, at 1723 hours with Unit 1 in Condition 1 (Power Operation) at 64% power, the unit was manually scrambled due to a loss of condenser vacuum. Condenser vacuum was lost when the Unit 1 Offgas System (EISS Code: WF) isolated on a false high-high hydrogen signal and neither the common nor the Unit 1 Offgas recombiner could be restored to operation. During the scram, reactor water level dropped below the scram initiation setpoint (+13 inches), as expected, to a minimum of 8 inches. The scram Off-normal and Emergency Procedures were entered due to water level dropping below +13 inches. All Level 3 (+13 inches) isolations occurred and there were no indications of failed Engineered Safety Feature (ESF) actuations or isolations. There were no Main Steam Relief Valve (MSRV) lifts. Containment parameters remained stable. All systems performed per design, except that one Intermediate Range Monitor (IRM; EISS Code: IG) did not insert due to a blown fuse. During the recovery from the level transient, reactor water level increased to +56 inches causing the reactor feedwater pumps (EISS Code: SK) to trip and High Pressure Coolant Injection (HPCI; EISS Code: BJ) and Reactor Core Isolation Cooling (RCIC; EISS Code: BN) Systems to trip on high water level. One reactor feedwater pump was restored to provide level control and HPCI and RCIC reset once the trip signal cleared. The unit was taken to Cold Shutdown.

CAUSE OF EVENT

An Event Review Team was formed to perform investigations and root cause analysis of this event. The Event Review Team determined the following:

The false high-high hydrogen isolation signal was a result of water intrusion into the Hydrogen Analyzer panel from adjacent work activities resulting in an electrical short in the panel. The water intrusion was a result of overflowing of a clogged strainer in the throat of a funnel that was staged to capture the water from the work activity. The root cause was determined to be that the risk assessment of performing the work activity was less than adequate. The assessment assumed that the water could be contained within the funnel and thus, not reach the hydrogen analyzer panel. The assessment did not take into account the possibility that the water may not be contained by the funnel. If the assessment had accounted for this possibility, then other protection for the panel would have been provided.

Operations personnel (utility; licensed and utility; non-licensed) were unable to open valves in the Offgas System in order to restore the system to operation. The root cause of the inability to restore the Offgas System to operation was determined to be that procedural inadequacies for the Offgas System resulted in an abnormal system response. In addition, several causal factors were identified. These factors are 1) the abnormal system response brought on by the procedural inadequacies was not part of operator

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Unit 1

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

training; 2) operator interaction with the Offgas System is infrequent; and 3) the Offgas System valves are infrequently stroked.

The IRM did not insert due to a blown fuse.

REPORTABILITY/ANALYSIS

Susquehanna SES Unit 1 was manually scrammed in anticipation of the loss of condenser vacuum when a false high-high hydrogen signal isolated the Offgas System. This event was determined to be reportable per 10CFR50.73(a)(2)(iv) in that an unplanned ESF actuation (manual scram) occurred.

During the scram, all plant systems performed in accordance with the design except that one Intermediate Range Monitor did not insert due to a blown fuse. The plant was safely shutdown and there were no safety consequences or compromises to public health and safety as a result of the manual scram, nor would there have been under different initial operating conditions.

In accordance with the guidelines provided in NUREG-1022, Supplement 1, Item 14.1, the required submission date for this report was determined to be March 27, 1997.

CORRECTIVE ACTIONS

The following corrective actions were identified and completed:

- The IRM blown fuse was replaced and the IRM was successfully inserted.
- The hydrogen analyzer was repaired.
- The solenoid valves on the inlet valves to the Unit 1 and Common recombiners were replaced.
- All major modification work issued for work field at the time of the event was halted and reviewed for risk prior to allowing work to continue.
- The screens were removed from all funnels.

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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | | | | PAGE (3) | | |
| Unit 1 | | YEAR | | SEQUENTIAL NUMBER | | REVISION NUMBER | | | | |
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

- The Off-normal procedures were revised to provide consistency and reasonable guidance for Offgas System operation when a high-high hydrogen isolation signal is present.

The following corrective actions have been identified and will be completed:

- The Standards of Professionalism will be reinforced with all Maintenance supervision.
- Additional oversight for risk assessment activities will be provided until Maintenance management is satisfied with the performance of these activities.
- The appropriate maintenance procedures will be revised to provide direction on risk assessment.
- The training frequencies for Licensed and Non-Licensed Operator Training on the Offgas System will be evaluated.
- A Non-Routine Training Package to raise the awareness of the Nuclear Department of the importance of the Offgas System will be developed for presentation by Functional Unit Managers to their groups describing this event.
- An assessment of the treatment of the Maintenance Rule Non-Risk Significant Systems will be performed to ensure it is meeting management expectations.

ADDITIONAL INFORMATION

Past Similar Events: None

Failed Component: None